



INVESTIGATOR'S ANNUAL REPORT

United States Department of the Interior
National Park Service

All or some of the information you provide may become available to the public.

OMB # (1024-0236)
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Form No. (10-226)

Reporting Year: 2010	Park: Shenandoah NP	Select the type of permit this report addresses: Scientific Study	
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Project Title (maximum 300 characters): Data gathering study on American Chestnut trees along the Appalachian National Scenic Trail within the framework of the A.T. MEGA-Transect			
Park-assigned Study or Activity #: SHEN-00352	Park-assigned Permit #: SHEN-2009-SCI-0012	Permit Start Date: Jun 15, 2009	Permit Expiration Date: Dec 31, 2010
Scientific Study Starting Date: May 19, 2008		Estimated Scientific Study Ending Date: Oct 30, 2061	
For either a Scientific Study or a Science Education Activity, the status is: Continuing		For a Scientific Study that is completed, please check each of the following that applies: <input type="checkbox"/> A final report has been provided to the park or will be provided to the park within the next two years <input type="checkbox"/> Copies of field notes, data files, photos, or other study records, as agreed, have been provided to the park <input type="checkbox"/> All collected and retained specimens have been cataloged into the NPS catalog system and NPS has processed loan agreements as needed	
Activity Type: Monitoring			
Subject/Discipline: Plant Communities (Vegetation)			

Purpose of Scientific Study or Science Education Activity during the reporting year (maximum 4000 characters):

The study aims to increase understanding of the status of surviving remnants of the American chestnut tree, a key forest species throughout Appalachia before being devastated by an Asian blight fungus in the early Twentieth Century. The study will inform the efforts of The American Chestnut Foundation (TACF) to restore this tree to its former function in the forest ecosystem. Data on large

individual trees with the potential to produce flowers will assist TACF in increasing genetic diversity of its backcross breeding program to produce an otherwise American chestnut with the blight resistant characteristics of Asian chestnuts.

Findings and status of Scientific Study or accomplishments of Science Education Activity during the reporting year (maximum 4000 characters):

The A.T. MEGA-Transect Chestnut Project recruits and trains volunteers to collect data on surviving American chestnut trees within the A.T. corridor. This is intended to be a long-term project for the purpose of providing information about trends in chestnut survival and characteristics of locations that support chestnut survival to inform eventual restoration of the American chestnut to its pre-blight role in the Appalachian forest. This project began in 2008 and continues to be in a piloting phase.

During 2010, a process was developed for dividing segments defined by the A.T. Guide Book into sub-segments and providing volunteers with GIS based segment maps and corresponding report forms. This mapping process will continue until all of the A.T. has been sub-segmented for more refined data collection. In addition, segmentation of the landscapes based on environmental variables has been completed for the portion of the trail in Pennsylvania.

Two volunteer training sessions led by scientists were held in 2010. Twenty-three volunteer data collectors participated in training at the Shenandoah National Park (SNP) Pinnacles Research Station near Luray VA . Twenty additional volunteers were trained at Wintergreen in Virginia. Volunteers were instructed to count all American chestnut trees whose tallest live stem is three ft or more in height whose base is within 15 ft to the trail. Multiple shoots from a single root system are counted as one tree. Volunteers were instructed to collect additional data on large treesâ defined as having a circumference of 13 or more inches at a height of 4.5 ft above ground. Volunteers also recorded estimates of visibility to enable converting counts to population densities. Volunteers were instructed not to collect samples, and were encouraged to take photographs.

Fifty-nine volunteers participated in the 2010 data collection, collecting data along 179 miles of trail (67.7 within SNP), counting a total of 7600 American chestnuts (3111 within SNP). Additional data was collected on thirty-five large trees (22 within SNP).

The process of segmentation of the trail landscape based on environmental variables has proven more time consuming than anticipated, and virtually all professional work on the project is currently being done on a volunteer basis. Data analysis is in a very preliminary stage, and is focused primarily on ensuring that the project design will contribute the long term needs of the diverse research that will be needed in the future to support and inform restoration efforts. Data and analysis, as completed, will be available at <http://sfr.psu.edu/public/chestnut/reports/mega-transect> .

For Scientific Studies (not Science Education Activities), were any specimens collected and removed from the park but not destroyed during analysis?

No

Funding specifically used in this park this reporting year that was provided by NPS (enter dollar amount):

\$0

Funding specifically used in this park this reporting year that was provided by all other sources (enter dollar amount):

\$0

List any other U.S. Government Agencies supporting this study or activity and the funding each provided this reporting year:

Paperwork Reduction Act Statement: A federal agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. Public reporting for this collection of information is estimated to average 1.625 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the forms. Direct comments regarding this burden estimate or any aspect of this form to Dr. John G. Dennis, Natural Resources (3127 MIB), National Park Service, 1849 C Street, N.W., Washington, DC 20240.